

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC**

In the Matter of:

**Proposal for Rulemaking to
Establish Technical Standards
for Certain Amateur Radio
Telephony Transmissions**

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Docket RM-10740

To: The Commission

COMMENTS ON PETITION FOR RULEMAKING

Submitted by:

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This petition addresses only a specific mode of operation, targeting a specific instance of a specific problem. An op-ed article written by one of the petitioners, published in the August edition of QST magazine, addresses the issue, and quotes the Commission's Mr. Riley Hollingsworth as stating that '[s]uch operation invites petitions for rulemaking to limit bandwidth.' [Mike Lonneke, W0YR, 'The Trouble with Single Wideband', QST, August 2003, page 83]

While such a rulemaking petition may be 'invited' by the problem, it is my opinion that adoption of the changes requested by this petition would not be the correct solution.

Other services regulated by the FCC have specific bandwidth limits placed on them, but this is because they are assigned specific frequencies of operation. On the new 5 MHz amateur secondary allocation, the amateur service is also regulated in this manner, since the adjacent channel users are also assigned specific frequency and bandwidth allotments.

With the exception of the 5 MHz allocation, amateurs are not assigned specific operating channels; the need for an absolute limit on bandwidth is therefore not the same as for other services. Our existing rules, as pointed out in the letter from Mr. Hollingsworth attached to the proposal as Exhibit 1, already address the specific problem of excessive bandwidth, by requiring that signals occupy no more bandwidth than necessary.

Similar regulations exist for power levels used by amateurs - but the limits are maximums, not typical values. It is expected that an amateur station use the maximum level only when there is a need to do so.

While the current regulations do not specifically address *necessary* bandwidth, Mr. Hollingsworth's letter refers to the requirement that 'amateur operators cooperate in the utilization of frequencies allocated to them, and make the most effective use of them.' [Exhibit 1 of the rulemaking proposal]. While his letter also indicates that the amateur spectrum

was not allocated for "broadcast quality" audio emissions or sound', the rules currently do not, and in my opinion should not, prohibit it unless it interferes with the *cooperative utilization* principle referred to in the letter.

One of the reasons for the existence of the amateur service is for experimentation and development of new modes of communications. Recent developments include digital modes such as PSK31, THROB, MFSK16, Q15X25, and MT63. These modes vary from the extremely narrow bandwidth of PSK31 and THROB, to the relatively wide but highly effective modes of Q15X25 and 2 kHz bandwidth MT63. The stations involved in operating "enhanced SSB" may well have been an example of a bad experiment, but the amateur rules must continue to allow experimentation. At some future date, there may be a variation of SSB that, for some valid reason, might exceed the 2.8 kHz limit requested by the petitioners. The rules should be kept as flexible as possible in order to assure that such things can occur.

Adoption of the rulemaking proposal which could be considered by some a "knee-jerk reaction" to a single situation could have some unanticipated side effects: for example, the petitioners ask that SSB transmissions be permitted a 2.8 kHz bandwidth, and AM permitted 5.6 kHz. Since the bandwidth of an AM signal must, unlike SSB, necessarily include the spectrum between the carrier frequency and the lowest modulating frequency, this proposal would limit the audio response of an AM signal to 2.8 kHz, compared to a nominal 100-2900 Hz frequency response (assuming 1.5 kHz for the center of intelligence). One of the reasons operators may choose the AM mode is for improved audio quality over SSB. On 160 meters, 'resurrected' commercial broadcast transmitters are sometimes used for this reason. This proposal would, in fact, require more restricted audio bandwidth for AM than for SSB, and render a good portion of current AM transmitters illegal unless modified.

As an alternative to the rule changes proposed, I would request that the Commission consider a change in the paradigm used to divide the bands into sub-bands. The new paradigm would be one of creating sub-bands based on the bandwidth of the transmitted signal, rather than based on the modulation method or content of the signal, and would assure bandwidth is available for emerging modes, in particular digital communications modes.

For example, if the 10-meter band were divided up as:

28.000 - 28.100 kHz : occupied bandwidth not to exceed 100 Hz
28.100 - 28.250 kHz : occupied bandwidth not to exceed 500 Hz
28.250 - 28.300 kHz : occupied bandwidth not to exceed 1.5 kHz
28.300 - 28.500 kHz : occupied bandwidth not to exceed 3.5 kHz
28.500 - 29.000 kHz : occupied bandwidth not to exceed 7.0 kHz
29.000 - 29.700 kHz : occupied bandwidth not to exceed 20 kHz

The 100 Hz segment would accommodate CW, PSK31, and other very narrow-bandwidth modes.

The 500 Hz segment would accommodate 170-Hz shift RTTY and similar narrow-bandwidth data modes.

The 1.5 kHz segment would accommodate 850-Hz shift RTTY, 1-kHz bandwidth MT63, and similar modes.

The 3.5 kHz segment would accommodate SSB, 2 kHz shift MT63, Q15X25, and similar modes

The 7 kHz segment would accommodate AM, and similar modes.

The 20 kHz segment would accommodate 5 kHz-deviation FM and similar modes.

Similar divisions on the other bands could be made; coordination with the ARRL and other organizations would permit existing customary uses to be maintained while providing additional flexibility for future uses. If the Commission considers this to be an excessive level of detail, an alternative could be to define the current 'CW' bands as 100 Hz bandwidth maximum, the current 'CW and data' bands as 1.5 kHz bandwidth, the current 'SSB' bands (i.e. the 28.3 - 28.5 MHz portion of 10 meters) as 3.5 kHz bandwidth, and the current 'Phone and Image' bands as 3.5 kHz bandwidth, with a portion set aside for 7 kHz bandwidth to accommodate the existing AM users (who generally occupy specific areas of the phone bands already), and 20 kHz bandwidth permitted where FM is currently permitted on 10 meters.

The current rules requiring being a good neighbor, complying with good engineering practices, and other common-sense restrictions, should remain unchanged.

The current rules specifying maximum frequency shift and data rates would be deleted.

The current prohibitions against using digital modes in the current phone bands would be removed. This could be especially useful for traffic net operations and emergency communications. Most of the newer digital modes operate using computer sound cards; allowing mixed-mode data and voice would permit valuable flexibility in handling message traffic, particularly in emergency response situations.

In summary, I believe the proposal is not in the best interest of ham radio, and not consistent with the policies of deregulation and regulatory flexibility. Existing rules adequately cover the specific issue referenced as the driver behind this proposal, and enforcing - publicly - the requirement to 'be a good ham' should be the preferred corrective action.

While I believe that a regulatory restriction on the bandwidth of a SSB signal is the wrong response to the situation, there is merit in considering regulation of bandwidth. This regulation, however, should be in the context of deregulation and flexibility, rather than in the context of corrective action. If bandwidth rules are adopted, they should provide for maximum flexibility:

- 1 - The bandwidths should be sufficient to accommodate existing users, including users who have older equipment that may not have the sophisticated filtering of new equipment.
- 2 - The prohibition against data modes in the voice bands should be deleted, in order to allow mixed-mode operations on the same frequency.
- 3 - Occupied bandwidth, not mode of operation, should be adopted as the discriminator between sub-bands.

Ham radio is, and must remain, a service which can provide for flexible use of its resources and self-regulating to the maximum extent feasible. It must be able to attract our nation's youth and provide a channel for personal growth and experimentation. I have personally benefitted from ham radio, having been first licensed at age 9, over 34 years ago. The experiences I had as a young ham pointed me towards a career in engineering, where I have been an civilian engineer for the U.S. Navy for the past 22 years.

Maintaining this legacy is important to me, and I try to pay back to Ham Radio part of what it has given to me by participating in the local ARES (Amateur Radio Emergency Service), and RACES (Radio Amateur Civil Emergency Service) programs, and the MARS (Military Affiliate Radio System) program.

I respectfully submit these comments to the Commission in the hope that ham radio's future can be as good as, and if possible better than, its past.

Paul L. Schmidt
25 July 2003